

REMARKS

Claims 1, 2, 7, 8, and 27 through 30 are pending in the application with the present amendments. All of the pending claims continue to be readable on elected Species I (illustrated in FIG. 3). Continued examination of the pending claims is respectfully requested in view of the amendments presented herein. In the final Office Action, all claims were rejected as being anticipated by U.S. Patent No. 4,786,608 to Griffith ("*Griffith*").

As amended herein, the presently pending claims are more closely directed to certain preferred embodiments of the invention. The preamble of claim 1 is amended to clarify that the method forms a semiconductor-on-insulator substrate. Claim 1 is further amended to recite that the second energy level (of the room temperature implant) has a value ranging from 10% less than the first energy level (used for the base dose implant) up to the first energy level itself, and that the BOX layer has superior dielectric breakdown strength per unit thickness. The discussion at paragraphs [0031]-[0032] and FIG. 8 illustrate the particular structure and properties of the BOX layer achieved in accordance with the presently claimed invention.

Griffith is directed to a SIMOX method of forming an SOI wafer having an electric field shielding (EFS) layer 33 (FIG. 3), e.g., polysilicon layer (See title, abstract, col. 4, Ins. 61-68) in addition to the BOX layer. *Griffith* has no stated purpose of forming an SOI wafer with a BOX layer having superior dielectric breakdown strength. *Griffith* is only concerned with forming the EFS layer. *Griffith* provides no indication that a BOX layer having superior dielectric breakdown strength is achieved.

Griffith never expresses a requirement that the second energy level be from 10%

less than the first energy level up to the first energy level itself. Instead, *Griffith* states broad ranges of energy levels at which the implants can be performed; e.g., 150-200 keV (col. 4, ln. 15) for the first implant and 120-140 keV (col. 4, ln. 35) for the second implant. From this information, *Griffith* makes clear that the second base dose implant MUST be performed at an energy level lower than the first base dose implant. Also, the broad ranges of energies stated in *Griffith* do not teach performing the second base dose implant at an energy that ranges from 10% below the first energy level to the first energy level.

Moreover, *Griffith* fails to teach more detailed aspects of the invention as recited in claims 27 through 30. Claim 27 recites a particular breakdown voltage property for a given BOX layer thickness when the claimed process is performed as recited therein. Specific support therefor is provided at paragraphs [0031]-[0032] and FIG. 8. Claim 28 more specifically recites the SOI wafer structure for which the particular high breakdown voltage BOX layer is achieved. As discussed above, *Griffith* fails to teach that the second energy level can be equal to the first energy level. (claim 29). Finally, *Griffith* fails to teach additional specific conditions under which the claimed process can be performed as recited in claim 30.

Support for the present amendments is provided, inter alia, at paragraphs [0021], and [0027]-[0032].


In view of the amendments and remarks herein, it is believed that all claims of the application are now in condition for allowance. However, if for any reason the Examiner does not believe that such action can be taken at this time, the Examiner is requested to telephone the applicants' attorney at the number indicated below to

discuss any issues that may remain.

This amendment is filed with a petition for one month extension of time. If any fee is due in connection with this amendment, authorization is granted to debit the Deposit Account No. 09-0458 of the Assignee. If there is an overpayment, please credit the same account.

Respectfully submitted,
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By: _____


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